

INHIBITION OF NONINACTIVATING Na CHANNELS OF MAMMALIAN
OPTIC NERVE AS A MEANS OF PREVENTING OPTIC NERVE
DEGENERATION ASSOCIATED WITH GLAUCOMA

5

Abstract of the Invention

10 A method and composition for altering a plausible
sequence of pathological events in retinal ganglion cells
associated with glaucoma, the sequence including membrane
depolarization, influx of millimolar amounts of Na⁺ via
non-inactivating Na⁺ channels, and the lethal elevation of
cell Ca²⁺ due to reversal of the Na⁺/Ca²⁺ exchanger. The
method includes blocking, by administration of a selected
15 composition, of associated, non-inactivating Na⁺ channels
in retinal ganglion cells in order to limit Na⁺/Ca⁺
exchange in the retinal ganglion cells and prevent
buildup of the Ca²⁺ level in the retinal ganglion cells
to a lethal level. The results in a method of preventing
20 retinal ganglion cell death, associated with glaucoma, by
administering to the optic nerve of a mammal, a compound
which blocks the non-inactivating sodium ion channels of
the optic nerve. Alternately, said invention relates to
a method of preventing optic retinal ganglion cell death
25 in a human by administering to the retinal ganglion cells
of said human a compound which blocks the non-
inactivating sodium ion channel of the retinal ganglion
cells.

10047660, 121204
T0047660, 121204